

Notice of Allowability

Application No.

09/938,611

Examiner

Tianjie Chen

Applicant(s)

FUNAYAMA ET AL

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed on 03/20/2006.
2. ☒ The allowed claim(s) is/are 1-10 and 20-28.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


TIANJIE CHEN
PRIMARY EXAMINER

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

- In claim 1, line 20; "direction." has been changed to --direction;--.
- In claim 1, lines 13-15 has been deleted.
- In claim 1, --an insulation layer disposed between each of the pair of magnetic yokes and the magnetoresistance effect film and also between each of the pair of biasing films and the magnetorsistance effect film.-- has been inserted after line 20 as the end.
- In claim 10, line 22; "direction." has been changed to --direction;--.
- In claim 10, lines 15-17 has been deleted.
- In claim 10, --an insulation layer disposed between each of the pair of magnetic yokes and the magnetoresistance effect film and also between each of the pair of biasing films and the magnetorsistance effect film.-- has been inserted after line 22 as the end.
- In claim 20, line 21; "direction." has been changed to --direction;--.
- In claim 20, lines 14-16 has been deleted.
- In claim 20, --an insulation layer disposed between each of the pair of magnetic yokes and the magnetoresistance effect film and also between

each of the pair of biasing films and the magnetoresistance effect film.--
has been inserted after line 21 as the end.

- In claim 28, line 23; "direction." has been changed to --direction;--.
- In claim 28, lines 16-18 has been deleted.
- In claim 28, --an insulation layer disposed between each of the pair of magnetic yokes and the magnetoresistance effect film and also between each of the pair of biasing films and the magnetoresistance effect film.--
has been inserted after line 23 as the end.

Reasons for Allowance

2. The following is an examiner's statement of reasons for allowance:

With regard independent claims 1, 10, 20, and 28; as the closest reference, a combination of Nepeta et al (US 6,078,479) and Hayashi et al (US 6,490,139) shows a magnetic reproducing head at a medium-facing surface, including a pair of magnetic yokes, each of the pair of magnetic yokes having a magnetic tip at the medium-facing surface and a rear portion recessed from the medium-facing surface and magnetically coupled to the magnetic tip, the magnetic tip having a first width in a track width direction at the medium-facing surface, the rear portion having a second width in the track width direction, and the second width being wider than the first width, a magneto-resistance effect film, recessed from the medium-facing surface, disposed between the pair of magnetic yokes, and magnetically coupled to the pair of magnetic yokes of ferromagnetic material, the rear portion of the one of the pair of magnetic yokes and the magnetoresistance effect film being aligned in a track width direction; an insulating layer disposed between each of the pair of magnetic yokes and the

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magnetoresistive film; a pair of biasing films recessed from the medium-facing surface, the pair of biasing films including a hard magnetic material layer a hard magnetic layer disposed adjacent to the rear portion or an antiferromagnetic material layer disposed in contact with the rear portion; Hayashi et al shows that a pair of biasing films 46 (Figs. 16 and 18; column 23, lines 8-9) recessed from the medium-facing surface, the pair of biasing films including a hard magnetic material layer CoCrTa; **but Hayashi et al shows** that the biasing films 46 contacts the magnetoresistance film MTJ (Column 25, lines 41-42), there is no insulation layer between each of the pair of the biasing films and the magnetoresistance film as recited in the amended claims in current Amendment.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tianjie Chen whose telephone number is 571-272-7570. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


TIANJIE CHEN
PRIMARY EXAMINER